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58. *Frullania Asagrayana* Mont. On ledges. Oxford.

59. *Frullania eboracensis* Gottsche. Common. Bark of living trees: maple, walnut, chestnut, arbor vitae, white birch. On stones. Worcester, Holden.

Anthocerotaceae

60. *Notothylas orbicularis* (Schwein.) Sulliv. On moist shaded soil. Worcester.

61. *Anthoceros laevis* L. Damp soil by edge of brooks, damp roadsides. Worcester, Oxford, Holden.

62. *Anthoceros punctatus* L. Damp soil by roadsides and brooks. Worcester, Holden, Oxford.

WORCESTER, MASS.

SHORTER NOTES

Lecanora atrosanguinea Merrill and Blastenia Herrei Hasse Identical

Dr. H. E. Hasse describes a new species of *Blastenia* in THE BRYOLOGIST, XVII, 6, p. 92, 1914, under the combination *B. Herrei* Hasse. The novelty of this lichen was pointed out by the writer in the *Ottawa Naturalist*, p. 117, 1913. It is there described as new, under the combination *Lecanora* (*Callopisma*) *atrosanguinea*. Mr. A. S. Foster, of Washington State, has sent several examples of the plant, and it turns up often from Vancouver Island, the type locality.

G. K. MERRILL.

The name *Blastenia Herrei* Hasse, n. sp., published in the BRYOLOGIST for November, 1914, is void, being antedated by *Lecanora atrosanguinea* Merrill, n. sp., published by Mr. Merrill in the Ottawa Naturalist, p. 117, 1913. I am indebted to Prof. John Macoun for a cotype specimen and to Mr. Merrill for a copy of his description. A comparison of the two specimens confirms their identity. Mr. Merrill's description was unknown to me when describing Dr. Herre's specimen. Both generic names are correct, according to the system of classification adopted: following that of Dr. A. Zahlbruckner the species is a *Blastenia* Section *Eublastenia*.

H. E. HASSE.

The January number of THE BRYOLOGIST with Grout's note upon *Leptobryum pyriforme* with gemmae reached me just as I was puzzling over the same phenomenon. Specimens were brought me a short time before by Mr. H. M. Mapes, a student in the Agricultural College of Cornell University, and consisted of two individual plants upon a glass slide. They had been growing in a greenhouse of the Agricultural College, where they had been discovered accidentally in the investigation of fern prothallia. The soil is said to have contained ashes.

A. LEROY ANDREWS.

COMPLICATED STEM-TISSUE IN POLYTRICHUM.—

Polytrichum has "a central cylinder composed of elongated cells with scanty contents, of elements resembling sieve-tubes, and of elongated cells; the three kinds of element serve respectively to transport water, albuminous substances, and carbohydrates."—Text-Book of Botany, Strasburger, etc., English Transl. 1912, p. 120.

MOSSWORTS IN BESSEY'S COLLEGE BOTANY.—In the "Essentials of College Botany," 1914, by Charles E. Bessey and Ernst A. Bessey, the "Mossworts" (Phylum VIII, Bryophyta) receive 12 of the 156 pages of systematic botany, 8%. In the Chicago "Textbook of Botany" (1910), Coulter gives the Bryophytes 11%. In Bergen and Davis's "Principles" (1906),the proportion is 13%; Campbell's "University Textbook" (1902), 12%; Atkinson's "College Botany" (1905), 14%; and Strasburger, Jost, Schenck, Karsten's "Textbook" (Engl. Edit., 1912), 5%. Although brief, the treatment in Bessey's text is clear and interesting.

Bessey's common names for many of the Mossworts will probably be new to many BRYOLOGIST readers. They are, stated in their respective order: Riccias, Hornworts (*Anthoceros*), Great Liverwort (*Marchantia*), Scale Mosses (*Jungermanniales*), Black Mosses (*Andreaeales*), Peat Mosses (*Sphagnales*), and True Mosses (*Bryales*). The True Mosses are Top Mosses (*Acrocarpi*) and Side Mosses (*Pleurocarpi*); these being Turf Mosses (*Dicranaceae*), Cushion Mosses (*Leucobryaceae*), Petticoat Mosses (*Splachnum*), Bristle Mosses (*Funariaceae* and *Timmiaceae*), Ephemeral Mosses (*Ephemerum*), Wood Mosses (*Bryaceae* and *Mniaceae*), Humpback Mosses (*Buxbaumiaceae*), Haircap Mosses (*Polytrichaceae*), Brook Mosses (*Fontinalaceae*), Tree Mosses (*Climaceae*), and Bog Mosses (*Hypnaceae*). The names, descriptive either of moss or habitat, are generally well-chosen, although "Tree Mosses" is somewhat ambiguous, and "Bog Mosses" will not appeal to moss students in regions with many *Hypnaceae* but few or no bogs. The book ends with an enumeration of the 683 families recognized by Bessey, the prominent families being briefly characterized, and the important genera mentioned. There are 6 families of Liverworts and 59 of Mosses.

The systematic sequence of the families of Mossworts is still a disputed question, practically all systematists, however, placing first the forms with flat thalli, like the Riccias, in which the sporophyte is little more than a mere spore-case. For the rest of the Liverworts the classification depends largely on whether the main reliance is placed on the characters of the gametophyte or of the sporophyte, or of both together. Bessey evidently placed most emphasis upon the gametophyte. His sequence is *Riccia*, *Anthoceros* with its more compact thallus, *Marchantia* with its highly complex thallus, the thalloid and, finally, the leafy *Jungermanniales*. This is inconsistent in that *Aneura* and *Pellia* among the thalloid *Jungermanniales* have probably the simplest known liverwort gametophytes. The rather generally accepted classification in which the sporophyte is given more prominence is probably a better one; the order then being *Riccia*, *Marchantia*, *Jungermanniales*, and ending with *Anthoceros* with its highly complex chlorophyll-bearing sporophyte.

Among the Mosses all classifications depend mainly on the sporophyte. Bessey places the *Andreaeales* before the Sphagnums, perhaps because the capsules open by four slits much as do the *Jungermanniales*. By most systematists *Sphagnum*, with its dome-shaped spore-layer, rudimentary seta, and bulbous foot, is regarded as closely related to *Anthoceros*, and so transitional between the Liverworts and Mosses. The sporophytic characters of the *Andreales* are mainly intermediate between those of *Sphagnum* and the *Bryales*, and Bessey's arrangement probably will not meet with general acceptance on this point.—O. E. J.

WANTED—SHORT NOTES. We very much need short notes, reviews, discussions, etc. There sometimes is more food for thought in a short note than in a long and detailed article, and in making up the BRYOLOGIST there are frequently places where such short notes could be used to good advantage. If you have a short bit of information that would be interesting to tell to a bryological friend then write it out and let us have it.—ED.

H. N. DIXON, in the Journal of Botany (Nov. 1913, pp. 324–330) publishes further investigations on the mosses of the Southern Hemisphere. After extended comparison a *Ditrichum* which has passed at various times under 6 generic and 9 specific names is finally labeled *Ditrichum flexifolium* (Hook.) Hampe. The range for this variously-named moss is given as: "South Africa, Madagascar, East African Islands, India, Java, New Caledonia, Australia, Tasmania, New Zealand, Patagonia, Chile." Critical notes are given on several Thuidiums and one new species is published: *Thuidium orientale* Mitt. MS., from the Malay Peninsula; while *Astomum Levieri* Limpr., hitherto known only from Europe, is recognized from Algeria.

BRYOLOGY OF NEW ZEALAND.—H. N. Dixon, in "Studies in the Bryology of New Zealand (N. Z. Institute, Bull. 3, Pt. I, June, 1913, 1–29, and Pt. II, Sept. 1914, 30–74) is mainly devoting himself to a critical study of the generally imperfectly understood and thus neglected species of Robert Brown, of Christchurch [Not "R. Br."] and aims to bring together as far as known the species hitherto recorded from New Zealand. In the Introduction is given a very interesting sketch of Brown's personality, qouting from Dr. L. Cockayne: "He was the most enthusiastic naturalist I ever met—a man of but little education, intensely modest in many ways, and yet self-opinionated to no small degree. He was about seventy years of age when he first commenced to write. . . . His microscope was old and in bad repair; his drawing apparatus was self-made; he possessed hardly a book beyond the Handbook [Handbook of the New Zealand Flora—Hooker] and some ancient botanical text-books. In the field no discomfort, no toil, was too great. He would sleep in the open, perhaps without food, carry burdens for incredible distances, be wet through for weeks at a time—and all for his love of natural history. I have seen him after a long day's tramp, and when eighty years of age, walk barefoot on a stony river-bed in search of wood for the fire. He was a shoemaker by trade, but for many years did no work—not because he had much of this world's goods, for he had very little. His one love was nature in all its forms, and, get him away from mosses, his conversation was clever and his views on many points brilliant."

Unfortunately Brown's drawings and descriptions have left much to be desired and his herbarium is found to be very imperfect, many of the types even being missing, so that Dixon's task is no small one. Dixon says: "That the botanical work of a man of such enthusiasm, so true a lover of nature's works, so indefatigable and unsparing of himself in their pursuit, should stand in danger of being lost to science would be deplorable. It is in the hope of rescuing some parts at least from oblivion that I have undertaken these papers."

The two Parts thus far published deal entirely with genera of the *Dicranaceae*, there being full keys to the genera, and many of the species being illustrated on the six plates. Five new species are published in *Dicranoloma*, and one each in *Pleuridium* and *Dicranella*. These papers will prove of great value to all who wish to know of the mosses of New Zealand, or indeed of the whole Southern Hemisphere, for many of the species are widely distributed. Further papers will be awaited with much interest.—O. E. J.

NUMBER OF SPECIES OF MOSSES KNOWN.—

It is very difficult to give an exact statement in regard to the number of known species of mosses in the world. Paris, in the second edition of the *Index Bryologicus*, enumerates 14,067 species, of which 1419 are given for America north of Mexico. This was in 1900. I doubt if it is far wrong today, for many of the species listed are only synonyms and these reductions are balanced by new descriptions. In round numbers I should say we have 1500 species of mosses in America north of Mexico, including good, bad, and indifferent ones. In the United States alone I dare not say, but "guess" 1000–1200.

E. B. CHAMBERLAIN.

SULLIVANT MOSS SOCIETY NOTES

Members of the Sullivant Moss Society will be pained to learn of the death, on December 31, last, of Dr. A. F. K. Krout, of Glenolden, Penna., for twelve years a member of the society. Dr. Krout was especially interested in the study of hepatics, and was instrumental in interesting many of his botanical friends in them.

EXCHANGE DEPARTMENT

Offerings to S. M. S. Members for stamped self-addressed envelope:

Mr. Edward B. Chamberlain, 18 West 89th St., New York City.—*Camptochaete arbuscula* (Hook. f. & Wils.) Jaeg., collected in New Zealand.

Rev. H. Dupret, Seminary of Philosophy, Montreal, Canada.—*Drepanocladus aduncus* var. *aquaticus* Sanio, collected near Montreal.

Mr. Severin Rapp, Sanford, Fla.—*Frullania Rappii* Evans, *F. cobrensis* Gottsche, and *F. Kunzei* Lehm. & Lindenb., collected at Sanford, Florida.

Mr. C. C. Plitt, 3933 Lowndes Ave., Baltimore, Md.—*Cetraria Oakesiana* Tuck.

Dr. H. E. Hasse, Santa Monica, Cal.—*Rinodina succedens* Nyl. Collected in California.